

REMARKS

Claims 1, 3, 7, and 11-27 are pending in the present application. Claims 15-19, 22, and 25-27 are rejected under 35 U.S.C. 102, and claims 1, 3, 7, 11-14, 20, 21, 23, and 24 are rejected under 35 U.S.C. 103. Claims 7, 15, 17, and 18 are amended, and claim 11 is canceled. No new matter is added. The rejections are respectfully traversed in light of the following remarks, and reconsideration is requested.

Figures 3, 4, 8, and 9 are objected to for being difficult to distinguish structure features. Figs. 3, 4, 8, and 9 have been re-drawn for clarity and replacement figures are included herein. No new matter is added.

Rejections under 35 U.S.C. § 102(b)

Claims 18, 19, 22, and 25-27 were rejected as being anticipated by Bechard et al. (U.S. 4,028,798). Bechard discloses that the circuit board material embeds the wires due to material flowing over the wires. (Bechard, col. 6, lines 42-49 and 59-60; col. 7, lines 22-23). Ultrasonic vibrating and/or heating causes the material to flow over the wires. (Bechard, col. 6, lines 57-60). Thus, the groove formed by the tool is closed around the wire when the tool is withdrawn and material flows back into the groove.

In contrast, claim 18 has been amended to recite "forcing bond material around the wire to close the groove around the wire in a pre-determined shape". Support for the amendment is found in Applicants' specification at paragraphs [0033]-[0034] and Figs. 10A-10D. Thus, no new matter is added. The method of claim 18 requires forcing bond material around the wire. A bond tool with a staking portion actually forcibly pushes the material around the wire to close the groove. This staking portion forms a pre-determined shape, for example, as seen in Fig. 10D, over the wire, which results in a consistent bond. The method taught by Bechard does not force bond material around the wire nor does it close the groove

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in a pre-determined shape. As discussed above, the wire in Bechard is embedded by simple material flow over the wire. This process results in different and inconsistent shapes, depending on the heat and/or vibration energy, the type of material, the depth of the groove, etc.

Therefore, because Bechard does not teach or suggest "forcing bond material around the wire to close the groove around the wire in a pre-determined shape", as recited in claim 18, claim 18 is believed patentable over Bechard et al.

Claims 19, 22, and 25-27 depend on claim 18 and are thus patentable over Bechard for at least the same reasons as claim 18.

Claims 15-17 were rejected as being anticipated by Deubzer et al. (U.S. 4,781,319). In rejecting the claims, the Examiner writes, in part, that Deubzer et al. disclose . . . a first clamping portion (adjustable guide 56 with adjustment means 58 in Figure 1) . . . and a second clamping portion in the form of an opposing (in terms of applying a second clamping force of wire 20) and moveable second clamp arm (wire clamp 24)". Thus, it appears that the Examiner is construing adjustable guide 56 as a first clamp arm and wire clamp 24 as a second clamp arm.

In contrast, claim 15 has been amended to recite "a directly opposing second clamp arm". Support is found in Applicants' specification at Figs. 4 and 5 and corresponding text. Thus, no new matter is added. The adjustable wire guide 56 and wire clamp 24 are not directly opposing clamp arms.

Even taken individually, neither the wire guide 56 nor the wire clamp 24 teach or suggest the limitations recited in claim 15. Wire guide 56 is simply a wire guide that can be moved along the direction of arrow 58 to change the angle at which the wire 20 is received from spool 22 and fed to wire clamp 24. It is not a clamp for holding a wire nor does it have any gripping region as recited in claim 15. Furthermore, the opening through which the wire

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exits the guide is narrower than the opening from which the wire enters. Claim 15 recites that "the wire enters the clamp through the first curved portions and exits the clamp through a second opening wider than the first opening". Support for the amendment is found in Applicants' specification at paragraph [0030] and Fig. 5. Thus, no new matter is added.

Wire clamp 24 is described as having jaws with "a clamping area more extensive than is common". (Col. 4, lines 52-55). There is no description about the shape of the jaws or clamp arms. Thus, Deubzer does not teach or disclose the wire clamp 24 having the limitations of the first and second clamp arms as recited in Applicants' claim 15.

Accordingly, Applicants believe claim 15 is patentable over Deubzer because Deubzer does not teach or suggest the limitations of claim 15 as discussed above.

Claims 16 and 17 depend on claim 15 and are thus believed patentable for at least the same reasons as claim 15.

Therefore, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. 102.

Rejections under 35 U.S.C. § 103(a)

Claims 20, 21, 23, and 24 were rejected as being unpatentable over Bechard et al. in view of Elwood et al. (U.S. 5,217,154). Claims 20, 21, 23, and 24 depend on claim 18 and Elwood is cited for teaching limitations of these dependent claims. However, Elwood does not remedy the deficiencies of Bechard as discussed above with respect to claim 18. In particular, Elwood teaches a bond tool tip 1 having a groove 7 for "retaining a wire or the like to be welded therein". (Col. 3, lines 12-16; Fig. 1). Elwood also teaches conventional bonding methods and bond tool tips at col. 1, lines 34-58. Elwood simply discloses conventional bonding in which a tool tip brings the wire and conductive surface in contact, where energy is applied to bond or weld the wire to the conductive surface. There is no

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teaching or suggestion of "forcing bond material around the wire to close the groove around the wire in a pre-determined shape", as recited in claim 18.

Because Elwood does not remedy the deficiencies of Bechard as applied to claim 18 and because claims 20, 21, 23, and 24 depend on claim 18, claims 20, 21, 23, and 24 are believed patentable over Bechard in view of Elwood for at least the same reasons as claim 18.

Claims 1 and 3 were rejected as being unpatentable over Elwood in view of Benson et al. (U.S. 3,747,198). The Examiner states, in part:

Elwood et al. disclose . . . an aperture 9 (serving as a guide portion) that further includes aperture opening 11 and aperture outlet 13, and either a semicircular or inverted V-shaped groove 7 (operable as either a grooving portion or a staking portion, respectively) . . . Elwood et al. do not disclose the use of both a grooving section and a staking section.

However, Benson et al. disclose . . . a shallow elongated groove 34 (operable as a grooving section) . . . , and wire guide means 42 (operable as a staking portion) to facilitate seating of the wire 38 in groove 34.

Applicants respectfully disagree. Elwood disclose "a groove 7 . . . for retaining a wire". (Col. 3, lines 14-16; Fig. 1). The shape of the groove can be semicircular, square, inverted "V", etc. (Col. 3, lines 16-19). As discussed above, Elwood simply discloses a bond tool for conventional bonding. Accordingly, Applicants believe that regardless of the shape of the groove, the groove is for retaining the wire, as specifically stated in Elwood. The wire is retained in the groove, whichever shape it may be, and brought into contact with a bonding surface for bonding. There is no teaching or suggestion that the groove 7 is "a grooving portion adjacent to the guide portion for forming a groove in the bond, wherein the grooving portion is approximately inverted V-shaped along the path of the wire" or "a staking portion adjacent to the grooving portion for closing the groove, . . . wherein the staking portion is approximately V-shaped along the path of the wire". For example, a staking portion requires a groove to be formed so that the taking portion can close the groove. Nothing in Elwood

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teaches that groove 7 forms a groove in the bond. In fact, the only disclosure indicates that groove 7 simply retains the wire for placing it in contact with the bonding surface.

Benson discloses an elongated groove 34 in which a wire 38 is seated, where the groove is elongated "to insure improved bond strength." (Col. 3, lines 29-34 and 63-65; col. 4, lines 24-27). Wire guide means 42 is used "to facilitate seating wire 38 in groove 34." (Col. 3, lines 51-52). The bonding wedge is moved downward, which completes the seating of the wire in the groove. (Col. 4, lines 21-27). Force and ultrasonic vibration then bond the wire to the contact pad. (Col. 4, lines 27-31). Thus, wire guide means 42 simply guides the wire into groove 34, where the wire is then seated for bonding. (Note that groove 34 is similar in function to groove 7 of Elwood.) As with Elwood, Applicants could find no teaching or suggestion that groove 34 is a grooving portion that forms a groove in the bond or that wire guide means 42 is a staking portion that closes the groove, much less the shape of grooving portion and staking portion recited in claim 1.

Thus, because Applicants believe that neither Elwood nor Benson, alone or in combination, teach or suggest the grooving portion or the staking portion recited in claim 1, claim 1 is patentable over Elwood in view of Benson.

Claim 3 depends on claim 1 and is thus patentable over Elwood in view of Benson for at least the same reasons as claim 1. In addition, neither Elwood nor Benson disclose or suggest that a "staking portion has a shallower V-shape than the guide portion", as recited in claim 3. Thus, for this additional reason, claim 3 is patentable over the cited references.

Claims 7 and 11-14 were rejected as being unpatentable over Deubzer in view of Benson.

Claim 7 has been amended to recite that "the grooving section forms a groove in the bond and the staking portion closes the groove over the wire". Support for the amendment is found in Applicants' specification at paragraph [0034] and Figs. 10C-10D. Thus, no new

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matter is added. Deubzer and Benson have both been discussed above. Because neither, along or in combination, teach or suggest that "the grooving section forms a groove in the bond and the staking portion closes the groove over the wire", as recited in claim 7, claim 7 is believed patentable over Deubzer and Benson.


Claim 11 is canceled. Claims 12-14 depend on claim 7 and are thus patentable for at least the same reasons as claim 7.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. 103.


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CONCLUSION

For the foregoing reasons, Applicants believes pending claims 1, 3, 7, and 12-27 are allowable, and a notice of allowance is respectfully requested. If the Examiner has any questions regarding the application, the Examiner is invited to call the undersigned Attorney at (949) 752-7040.

Certification of Facsimile Transmission	
I hereby certify that this paper is being facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.	
 Sandy Kim	<u>October 26, 2007</u> Date of Signature

Respectfully submitted,


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Assignee: Orthodyne Electronics
Title: Automated Filament Attachment System for Vacuum Fluorescent Display
Serial No.: 10/692,706 Filing Date: October 23, 2003
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Docket No.: M-15261US Confirmation No.: 9787

Irvine, California
October 26, 2007Mail Stop Amendment
Fax No.: (571) 273-8300SUBMISSION OF REPLACEMENT DRAWINGS

Dear Sir:

Applicants submit four (4) sheets of replacement drawings, consisting of Figures 3, 4, 8 and 9, in the above-named application.

If there are any questions regarding these drawings, please call the undersigned at (949) 752-7040.

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